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REMARKS

Applicant respectfully requests reconsideration of this application as amended. Claims 18-19 and 23-24 have been amended. Claims 1-17 have been cancelled without prejudice. No new claims have been added. Therefore, claims 18-28 are presented for examination.

35 U.S.C. § 102(b) or §103 Rejection

Claims 18-28 stand rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Herbst, II, U.S. Patent No. 5,457,342 ("Herbst").

Claims 18-28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Chu, et al., U.S. Patent No. 6,424,533 ("Chu") in view of Richman, U.S. Patent No. 4,685,081 ("Richman").

As an initial matter, Applicants disagree with the Examiner's characterization of the references and the pending claims. However, for the sake of expediting issuance of this matter, Applicant submit additional amendments to the pending claims and provide the following remarks.

Claim 18, as amended, recites:

> An apparatus, comprising:
> a heat sink comprising a thermoelectric (TEC) module having a polarity, the polarity capable of being adjusted to direct or redirect heat in one or more directions to melt or un-melt a thermal interface material (TIM); and
> the thermal interface material (TIM) coupled with the heat sink, the TIM receiving the heat in the heat sink upon changing of the polarity to melt the TIM up to an acceptable melt level to be applied to or removed from the heat sink, the TIM including a thermal conductive material to fill a thermal gap to dissipate the heat away from a integrated circuit (IC).

(emphasis added)

Applicants respectfully disagree with the Examiner's assertion that the Applicants attacking references individually (see Office Action, mailed 07-18-07, page 2). Furthermore, the Examiner relies on the language of claim 20 to assert that "the [methods] of forming . . . are not germane to the issue of patentability of a product itself" and continue to make the "product-by-process" argument. However, Applicants respectfully submit that although the Applicants disagree with the Examiner's assertions, they presented remarks regarding claim 18 being allowable and since claim 20 depends from claim 20, it includes all the limitations of claim 18 and is thus allowable over the cited references. Applicants respectfully submit that there is not motivation to combine the cited references nor do the cited reference, in any combination, teach or reasonably suggest any of the features of claim 18.

For example, Herbst discloses an "integrated circuit cooling apparatus including a *heat-conductive base plate* to be placed against an integrated circuit, a *Peltier Effect cooling module* having a cooling side connected to a top surface of the heat-conductive base plate, a heat radiator assembly connected to a heating side of the Peltier Effect cooling module and a *fan assembly* juxtaposed next to a heat-radiating portion of the heat radiator assembly." (emphasis added) Herbst further discloses, a "quantity of a ***heat-conductive adhesive material 32*** can be placed between the integrated circuit 13 and the bottom surface 16 of the heat-conductive base plate 12 for ***securing the apparatus to the integrated circuit 13***. The heat-conductive adhesive material 32 can be a ***double-sided adhesive tape***." (col. 7, lines 7-14; emphasis added).

First, Herbst's "heat-conductive **adhesive** material . . . ***for securing*** the apparatus to the integrated circuit" is not the same as the thermal interface material (TIM) including

a thermal conductive material to fill a thermal gap to dissipate the heat away from a integrated circuit (IC) as recited by claim 18. Further, the heat-conductive adhesive material of Herbst can be a ***double-sided adhesive tape*** and since an adhesive material, such as a double-sided adhesive tape, is merely used for securing the apparatus to the integrated circuit, it does not have any use for "receiving the heat in the heat sink upon changing of the polarity to melt the TIM up to an acceptable melt level to be applied to or removed from the heat sink" as recited by claim 18 (emphasis added), which is one reason why Herbst has no use for Richman's "Peltier ciruit" and does not render it obvious (col. 4, line 6).

. Hence, there is no motivation to combine the two references. Furthermore, Applicants respectfully submit that the *Peltier circuit* of Richman is **not the same** as the above-mentioned features of claim 18. For example, merely *heating or chilling the bubble memory device "to narrow the temperature range of operation of a bubble memory device in order to allow bubble memory device to be of a type with a limited permissible temperature range"* (col. 6, lines 6-14; emphasis added) **is not the same** as "TIM receiving the heat in the heat sink upon changing of the polarity to melt the TIM up to an acceptable melt level to be applied to or removed from the heat sink" as recited by claim 18. (emphasis added) Stated differently, the mere *narrowing of the temperature range* to be a *limited permissible temperature range* **is not equivalent to** melting the TIM up to an acceptable melt level to be applied to or removed from the heat sink via the changing of the polarity as recited by claim 18.

Chu discloses a "thermal dissipation subassembly is provided for an electronic device. The subassembly includes a thermal spreader configured to thermally couple to a surface of a heat generating component of the electronic device. The heat generating

component, e.g., an integrated circuit chip, has a non-uniform thermal distribution across the surface thereof between at least one first region of the surface and at least one second region of the surface, with the at least one first region having a higher heat flux than the at least one second region." (Abstract). Chu has no use for Richman's "Peltier ciruit" and does not render it obvious (col. 4, line 6). Hence, there is no motivation to combine the two references.

Herbst, Richman, and Chu, neither individually nor when combined, teach or reasonably suggest the limitations of claim 18. Accordingly, Applicants respectfully request the withdrawal of the rejection of claim 18 and its dependent claims.

Claim 23 contains limitations similar to those of claim 18. Accordingly, Applicants respectfully request the withdrawal of the rejection of claim 23 and its dependent claims.

Conclusion

In light of the foregoing, reconsideration and allowance of the claims is hereby earnestly requested.

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Invitation for a Telephone Interview

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

Request for an Extension of Time

Applicant respectfully petitions for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17(a) for such an extension.

Charge our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: August 17, 2007

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